

## REMARKS

*The Pending Claims*

Currently pending are claims 1-16 which are directed to a method of coating surfaces of a substrate. Reconsideration of the pending claims is respectfully requested.

*Amendments to the Claims*

Claims 1 - 2 and 4 - 5 are amended to point out more distinctly and claim more precisely the Applicants' invention. Specifically, claim 1 is amended to place it in a format more typical to U.S. prosecution. Claim 1 is also amended to clarify that the "polymer having derivatized hydroxyl and/or carboxyl groups and/or CN, halogen, and/or amino substituents" is subjected to a "solvolysis reaction" which "thereby deposit[s] the polymer on the surface of the substrate." Support for these amendments can be found at, for example, paragraph 5 on page 2 of the specification. Accordingly, no new subject matter has been added by way of these amendments.

*Summary of the Office Action*

The Office Action objected to the abstract for including improper claim language such as "means." The Office Action also objected to the specification for improperly referring to specific claims.

The Office Action rejects claims 1-5, 8, 10, 12, and 16 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent 3,393,162 (Cox et al.). Claims 1, 12, and 14-15 are rejected as anticipated by U.S. 3,993,716 (Klein et al.) Furthermore, the Office Action rejects claim 6 under 35 U.S.C. § 103(c) as obvious over Cox et al. in view of the article "Addition Polymerization." Claim 7 is rejected as obvious over Cox et al. in view of the article "Surface Treatment of Organic Pigments." Claim 9 is rejected as obvious over Klein et al. alone. Finally, claims 11 and 13 are rejected as obvious over Cox et al. in view of U.S. Patent 3,884,871 (Herman et al.).

*Discussion of the Specification and Abstract Objections*

Applicants have included herewith an amended Abstract that removes the objectionable claim language. Applicants have also amended the specification at page 2, paragraph 4 to

remove references to specific claims. Accordingly, Applicants respectfully submit that the objections to the specification and abstract have been overcome.

### *Discussion of the Claim Rejections*

To support the rejection of a claim for anticipation, a single prior art reference must teach every element of the rejected claim. See, e.g., M.P.E.P. § 2131. Likewise, to support the rejection of a claim as obvious, the prior art reference or references as combined must teach or suggest every element of the rejected claim. See, e.g., M.P.E.P. § 2143. Because neither Cox et al. nor Klien et al. specifically teach a method of depositing a polymer in which the polymer is subjected to a solvolysis reaction, neither of these references properly anticipates independent claim 1.

Referring to the IUPAC definition provided at Attachment A to this Reply, a solvolysis reaction is one in which chemical bonds are ruptured in the solute resulting in the formation of a new compound, such as a modified polymer. In Applicants' claimed invention, a solution containing a polymer is first brought into contact with a surface of a substrate. The method of claim 1 specifically requires that the polymer be subjected to a solvolysis reaction so that the polymer is converted to a form having reduced solubility. Reducing the solubility thereby deposits the polymer on the surface of the substrate. The claimed method is therefore distinguishable from mere adsorption and advantageously allows better control of depositing the polymer on the substrate.

Cox et al. teaches coating of particles by dispersing those particles in a solution of block or graft co-polymer having different degrees of polarity. The polarity of the solution can be modified to precipitate one or more components of the co-polymer onto the particles. See, e.g., Cox et al. col. 1, ll. 39-51. This is substantially the process described in example 4 of Cox et al. in which 1600 parts of a copolymer solution are mixed with 1800 parts rutile titanium dioxide and the mixture is ground for 15 minutes. A second mixture of xylol and mineral spirits are slowly added to the first mixture to modify its polarity and thereby precipitate the co-polymer. The process taught in Cox et al. therefore does not teach or anticipate subjecting a polymer to a solvolysis reaction so that the polymer is converted to a form having reduced solubility and is thereby deposited on the surface of a substrate.

Klein et al. relates to preparing vinyl polymer dispersions useful for coating purposes. See, e.g., Klein et al., col. 1, ll. 1-10. The vinyl polymer dispersion is formed by the process

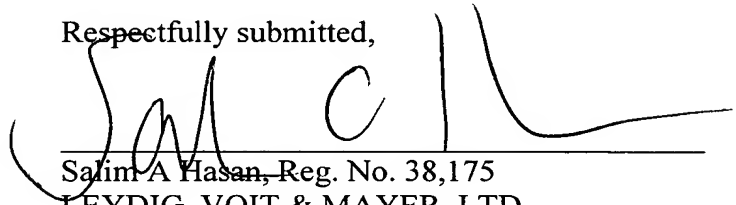
of dispersion (emulsion) polymerization in which the resulting vinyl polymer dispersion includes an insoluble vinyl polymer (component C disclosed at col. 4, ll. 45-58 of Klein et al.) and a partially soluble acrylic graft co-polymer (component D disclosed at col. 4, ll. 45-58 of Klein et al.) that functions as a stabilizer. See, e.g., Klein et al., col. 4, ll. 15-44. The resulting vinyl polymer dispersion can then be applied to, for example, a steel panel and dried thereon to produce a film. See, e.g., Klein et al., col. 15, ll. 61-68. The vinyl polymer film is effectively residue resulting from evaporation of the dispersion. There is no disclosure in Klein et al. about subjecting a polymer to a solvolysis reaction so that the polymer is converted to a form having reduced solubility and is thereby deposited on the surface of a substrate. The Klein reference does not even suggest using a *solution* of a polymer, but uses dispersion (emulsion).

Since neither Cox et al. nor Klein et al. teaches or discloses utilizing a solvolysis reaction to convert a polymer to a form showing reduced solubility and thereby deposit the polymer on a substrate, neither Cox et al. nor Klein et al. can anticipate claim 1. Since claim 1 is patentable over the primary references of Cox et al and Klein et al., dependent claims 2-15 should likewise be patentable. See, e.g., *RCA Corp. v. Applied Digital Data Systems*, 221 U.S.P.Q. 385 (Fed. Cir. 1984) (if a claim depends upon another claim that is not anticipated, the dependent claim cannot be rejected as anticipated); *In re Fine*, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988) (if a claim depends upon another claim that is not rendered obvious by a combination of prior art references, that dependent claim can likewise not be rendered obvious.)

*Conclusion*

If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Salim A. Hasan', is written over a horizontal line.

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**solvolysis**

Generally, reaction with a solvent, or with a *lyonium ion* or *lyate ion*, involving the rupture of one or more bonds in the reacting solute. More specifically the term is used for *substitution*, *elimination* and *fragmentation* reactions in which a solvent species is the *nucleophile* ('alcoholysis' if the solvent is an alcohol, etc.).

1994, 66, 1165